

**I. Remarks****Specification/Informalities:**

The format of the amendments to the specification has been corrected as requested by Examiner in the most recent paper dated 20 October 2004. Applicant thanks the Examiner for his voice message instructions about resubmitting the corrected amendment and response.

By way of the foregoing amendment to the specification and corrected drawings included herewith (Figure 3 and Figure 6), Applicant has separately described each of the drawing parts as suggested by the Examiner. Figure 3 and Figure 6 are amended so that each of the separate panels is labeled as Figure 3A, 3B, 3C, and Figure 6A, 6B, and 6C, respectively. The specification is appropriately amended by insertion of the separate labels for Figures 3 and 6 at the Brief Description of the Drawings, at page 20, at page 23 and at page 28.

The Examiner has suggested that Figure 1 be separately labeled as 1A and 1B, however Applicant is unclear about the reason for the request. Figure 1 consists of a single flow diagram labeled as "1000," similar to the flow diagrams of Figure 2 labeled as "100," Figure 5 labeled as "300," Figure 7 labeled as "700," and Figure 8 labeled as "40," for which the Examiner has not recommended amendment. Accordingly, Applicant believes that the foregoing amendments constitute a response in full to the informalities noted by the Examiner. If, however, the foregoing is deemed inadequate for the intended purpose, Applicant kindly requests clarification of any deficiencies.

**Claims:**

Claims 1-2, 5, and 7-9 are pending following entry of the foregoing amendment. Applicant herein directs cancellation of Claims 3, 4 and 6, and, due to restriction requirement, Claims 10-49 are similarly cancelled without prejudice to filing continuation applications thereon.

Claim 1 is herein amended by deletion of the phrase "non-random" at line 1. Claim 1 is further amended at part (b) by insertion of the phrase "by means of an imaging system that is selected from one or more of the group consisting of a light microscope, fluorescent microscope, spectral microscope, hyper-spectral microscope, electron microscope, confocal microscope, optical coherence tomograph, spectral telescope, x-ray spectrometry, microtomy, in situs, nuclear magnetic resonance (NMR), inductively coupled plasma (ICP), ICP-mass spectrometry, scanning fluorimetry, magnetic resonance imaging (MRI), and ultrasound."

Support for the amendments to Claim 1 is found throughout Applicant's specification and claims as originally filed, in particular, at original Claims 3 and 4 and at page 14, lines 13-20. Thus, no new matter is added.

Claim 2 is herein amended to correct for typographical errors by insertion of the word "of," deletion of the repeated phrase "a group of seeds" and replacement of the word "crop" with the word "selected." In addition, the phrase "a group of plant embryos, or a group of living tissue specimens having common characteristics" is inserted at line 3 of claim 2. Support for the inserted phrase is found in the specification at page 12, lines 26-28, continued on page 13, lines 1-2. Thus, no new matter is added.

Claim 5 is herein amended by altering the phrase "a plant phenomics index" to read "a plant macrophenomics index or a plant microphenomics index." Support for the amendment to Claim 5 is found throughout Applicant's specification and claims as originally filed, in particular, at Claim 6 and at page 13, lines 24-27. Thus, no new matter is added.

**II. The Rejection of Claims 1-9 under 35 USC § 112, 2<sup>nd</sup> Paragraph is Obviated**

Deletion of the phrase "non-random" in Claim 1 and addition of the full name "magnetic resonance imaging" is directed by the foregoing amendment, thus obviating the 35 USC § 112, 2<sup>nd</sup> paragraph rejection of Claim 1 and Claims 2-9 depending thereon. Accordingly, Applicants respectfully request withdrawal of the 35 USC § 112, 2<sup>nd</sup> paragraph rejection of Claims 1-9.

**III. Applicants Claimed Invention is not Anticipated by Hasenwinkle or Einarson**

Rejection of Claims 1 and 5-9 under 35 USC § 102(b) and (e) as being anticipated by Hasenwinkle (P/N 3,961,654) is obviated by the foregoing claim amendment. For example, the limitations of Claims 3 and 4, which describe selected imaging systems as means for sample analysis, have been written into amended Claim 1 so that the amended claim and those depending thereon are patentably distinguishable from the Hasenwinkle patent. Accordingly, Applicants respectfully request withdrawal of the 35 USC § 102(b) and (e) rejections of Claims 1 and 5-9.

For reasons as described above, the foregoing claim amendment obviates the rejection of Claims 1, 3 and 5-9 under 35 USC § 102(b) and (e) as being anticipated by Einarson et al.

(P/N 4,806,014). The limitations of Claims 3 and 4, which describe selected imaging systems as means for sample analysis, have been written into amended Claim 1 so that the amended claim and those depending thereon are patentably distinguishable from the Einarson et al. patent. Accordingly, Applicants respectfully request withdrawal of the 35 USC § 102(b) and (e) rejections of Claims 1, 3 and 5-9.

#### IV. Concluding Remarks

Applicants respectfully submit that the claimed invention, as amended, patentably distinguishes over the prior art and that Claims 1, 2, 5 and 7-9, as amended, are in condition for allowance. Accordingly, reconsideration of the application and passage to allowance are respectfully requested. The Examiner is respectfully urged to call the undersigned at (919) 425-3795 to discuss the claims in an effort to reach mutual agreement which will be effective to define the patentable subject matter, if the present claims are not deemed adequate for their intended purpose.

Respectfully submitted,



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